Claims

- 1. A resin obtained by polymerizing a starting material monomer, wherein the monomer incorporates a hydrophilic spacer.
- 2. The resin of claim 1, wherein the monomer is a (meth) acrylic monomer.
- 3. The resin of claim 1 or 2, wherein the hydrophilic spacer has at least one partial structure represented by any one formula selected from the group consisting of the following formulas (Ia) to (Ie).

$$-A_{1}-A_{2}- \begin{matrix} OH & OH \\ & & \\ &$$

wherein (Ia),

an integer of 0 to 2,

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- 15 A_1 is -O- or -NH-, A_2 is a single bond or a lower alkylene group, A_3 is an appropriate joining group, each of X_1 to X_3 , whether identical or not, is a single bond or a methylene group optionally substituted by a linear or branched alkyl group having 1 to 3 carbon atoms,
- each of R_1 to R_7 , whether identical or not, is a hydrogen atom, a linear or branched alkyl group having 1 to 3 carbon atoms, CH_2OH or a hydroxyl group, m is an integer of 0 to 2, m' is an integer of 0 to 10, m" is
- when a plurality of R_3 to R_7 units exist, they may be identical or not, and when a plurality of X_3 units exist, they may be identical or not;

wherein (Ib),

A₁ is -O- or -NH-, A₄ is a lower alkylene group, each of n and n', whether identical or not, is an integer of 1 5 to 10;

$$-A_{1}-A_{4} \circ \left(\begin{array}{c} \\ \\ \\ \end{array} \right)_{p} \left(\begin{array}{c} \\ \\ \\ \end{array} \right)_{p''} \left(\begin{array}{c} \\ \\ \end{array} \right)_{p''} \left(\begin{array}{c} \\ \\ \end{array} \right)$$

wherein (Ic),

A₁ is -O- or -NH-, A₄ is a lower alkylene group, each of p, p' and p", whether identical or not, is an integer of 1 to 10;

$$-A_{1}-A_{2} = \begin{bmatrix} OH \\ X_{4} \\ C \\ R_{8} \end{bmatrix} = \begin{bmatrix} R_{9} \\ C \\ R_{10} \\ R_{10} \end{bmatrix}$$
(Id)

wherein (Id),

 A_1 is -O- or -NH-, A_2 is a single bond or a lower alkylene group,

- $15~X_4$ is a single bond or a methylene group optionally substituted by a linear or branched alkyl group having 1 to 3 carbon atoms, each of R_8 to R_{10} , whether identical or not, is a hydrogen atom, a linear or branched alkyl group having 1 to 3 carbon atoms, $-CH_2OH$ or a hydroxyl group,
- 20 q is an integer of 1 to 7,

when a plurality of R_8 units exist, they may be identical or not, and when a plurality of X_4 units exist, they may be identical or not;

$$-A_1 \longrightarrow O \longleftrightarrow O \xrightarrow{H} O \longleftrightarrow Ie)$$

5 wherein (Ie),

 A_1 is -O- or -NH-,

r is an integer of 1 to 10.

4. The resin of claim 3, wherein the hydrophilic spacer has at least one partial structure represented by the following formula (Id).

$$-A_{1}-A_{2}$$

$$\begin{bmatrix}
OH \\
X_{4} \\
C \\
C \\
R_{8}
\end{bmatrix}$$

$$\begin{bmatrix}
R_{9} \\
C \\
R_{10}
\end{bmatrix}$$
(Id)

wherein (Id),

 A_1 is -O- or -NH-, A_2 is a single bond or a lower alkylene group,

 X_4 is a single bond or a methylene group optionally substituted by a linear or branched alkyl group having 1 to 3 carbon atoms, each of R_8 to R_{107} , whether identical or not, is a hydrogen atom, a linear or branched alkyl group having 1 to 3 carbon atoms,

20 -CH₂OH or a hydroxyl group,

q is an integer of 1 to 7,

when a plurality of R_8 units exist, they may be identical or not, and when a plurality of X_4 units exist, they may be identical or not.

- 5. The resin of claim 4, wherein in the formula (Id), A_1 is -O-, A_2 is a methylene group, X_4 is a single bond, q is 4, the plurality of R_8 units are identically hydrogen atoms, and R_9 and R_{10} are hydrogen atoms.
 - 6. The resin of claim 1, wherein the hydrophilic spacer is a compound represented by the formula shown below.

- wherein Ya is a hydrogen atom or an amino-group-protecting group.
 - 7. The resin of claim 5, which comprises a copolymer of a compound represented by the formula shown below.

$$H_3C$$
OH
OH
N
Y
A

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- wherein Ya is a hydrogen atom or an amino-group-protecting group.
- 8. A compound represented by the formula shown below.

$$H_3C$$
OH
OH
 N
 M
 M
 M

- wherein Ya is a hydrogen atom or an amino-group-protecting group.
- 9. The resin of claim 3, wherein the hydrophilic spacer has at

least one partial structure represented by the following formula (Ie).

$$-A_{1} \longrightarrow O \longleftrightarrow O \longrightarrow H \longrightarrow I$$
(Ie)

wherein (Ie),

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5 A₁ is -O- or -NH-,
r is an integer of 1 to 10.

10. The resin of claim 9, wherein in the formula (Ie), A_1 is -0-.

11. The resin of claim 1, wherein the hydrophilic spacer is a compound represented by the formula shown below.

wherein Yb is a hydrogen atom or an amino-group-protecting group.

12. The resin of claim 10, which comprises a copolymer of a compound represented by the formula shown below.

- 20 wherein Yb is a hydrogen atom or an amino-group-protecting group.
 - 13. A compound represented by the formula shown below.

wherein Yb is a hydrogen atom or an amino-group-protecting group.

- 5 14. The resin of claim 9, wherein in the formula (Ie), A_1 is -NH-.
 - 15. The resin of claim 1, wherein the hydrophilic spacer is a compound represented by the formula shown below.

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wherein Yb is a hydrogen atom or an amino-group-protecting group.

16. The resin of claim 14, which comprises a copolymer of a compound represented by the formula shown below.

$$H_3C$$
 CH_2
 $NH-YD$

wherein Yb is a hydrogen atom or an amino-group-protecting group.

20 17. A compound represented by the formula shown below.

wherein Yb is a hydrogen atom or an amino-group-protecting group.

- 5 18. A solid phase carrier for affinity chromatography comprising a ligand immobilized on the resin of any one of claims 1 to 7, 9 to 12 and 14 to 16.
- 19. The solid phase carrier of claim 18, which is for searching a target molecule for the ligand.
 - 20. A screening method for a target molecule that exhibits a specific interaction with a ligand, which comprises at least the following steps:
- 15 (i) a step for immobilizing a ligand to the resin of any one of claims 1 to 7, 9 to 12 and 14 to 16,
 - (ii) a step for bringing a sample comprising or not comprising a target molecule into contact with the ligand-immobilized resin obtained in (i) above,
- (iii) a step for identifying and analyzing a molecule that has exhibited or has not exhibited a specific interaction with the ligand, and
- (iv) a step for judging a molecule that exhibits a specific interaction with the ligand to be a target molecule on the 25 basis of the analytical results obtained in (iii) above.
 - 21. A method of measuring a target molecule that exhibits a specific interaction with a ligand in a sample, which comprises at least the following steps:
- 30 (i) a step for immobilizing a ligand to the resin of any one

- of claims 1 to 7, 9 to 12 and 14 to 16,
 - (ii) a step for bringing a sample into contact with the ligand-immobilized resin obtained in (i) above,
 - (iii) a step for measuring and analyzing a molecule that has
- 5 exhibited or has not exhibited a specific interaction with the ligand, and
 - (iv) a step for measuring a target molecule that exhibits a specific interaction with the ligand on the basis of the analytical results obtained in (iii) above.

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